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FIG. 1

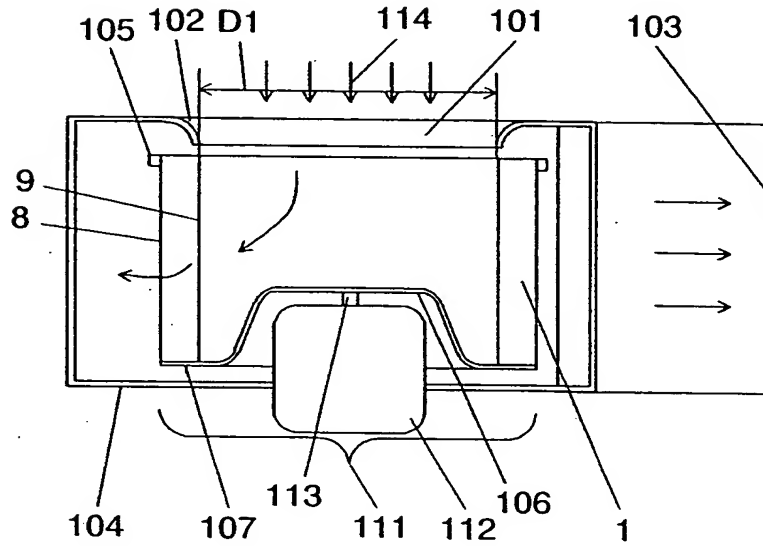
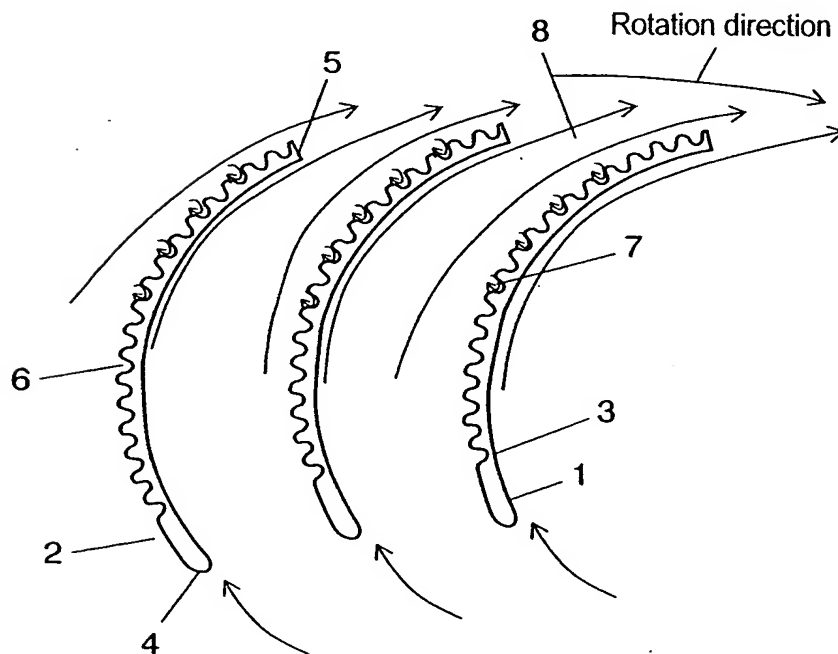


FIG. 2



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FIG. 3

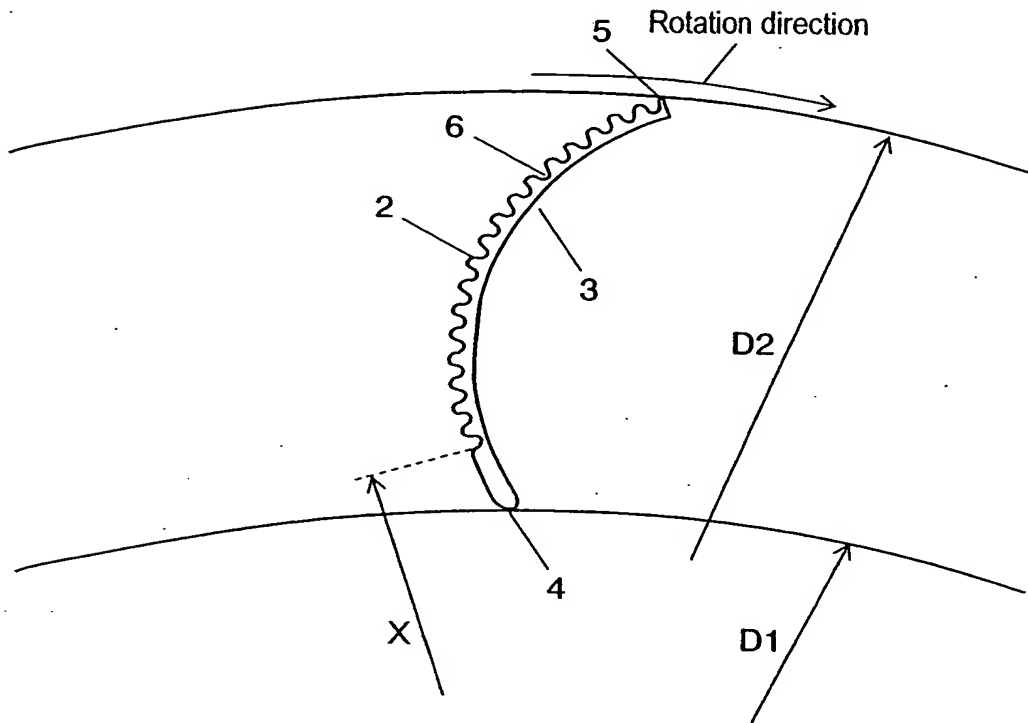


FIG. 4A

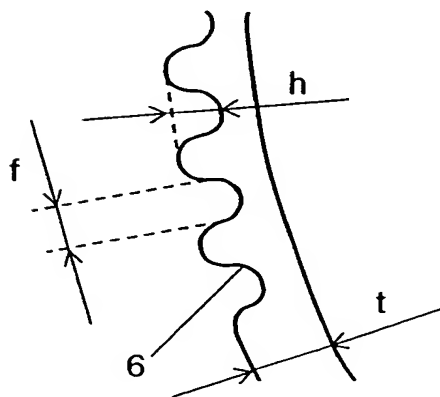
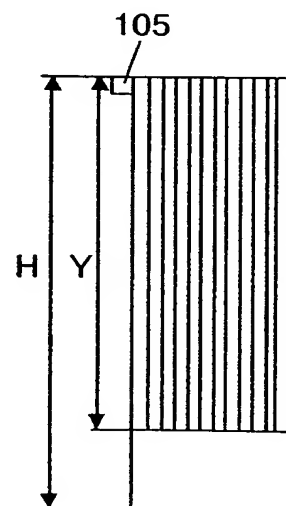


FIG. 4B



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FIG. 5A

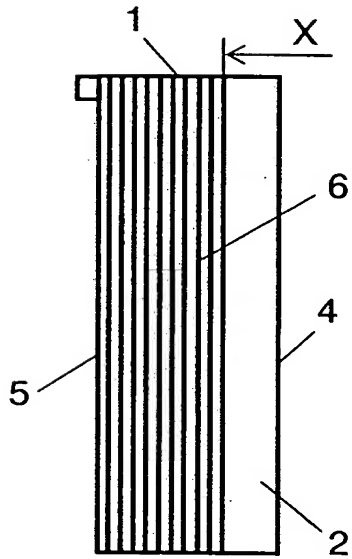
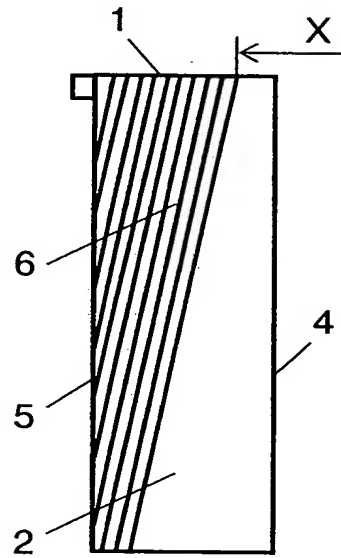


FIG. 5B



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FIG. 6A

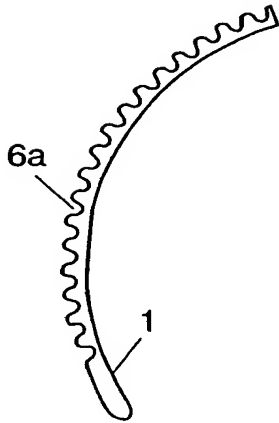


FIG. 6B

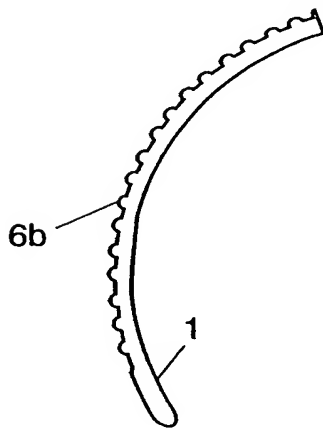


FIG. 6C

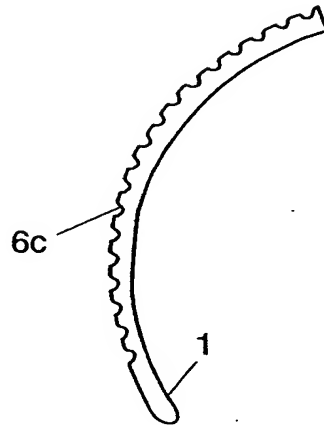


FIG. 6D

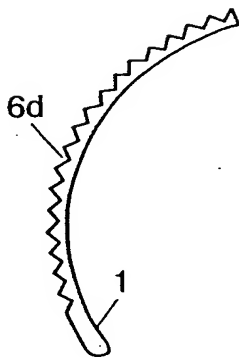


FIG. 6E

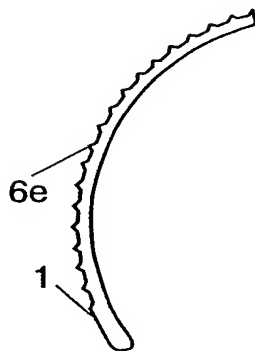


FIG. 6F

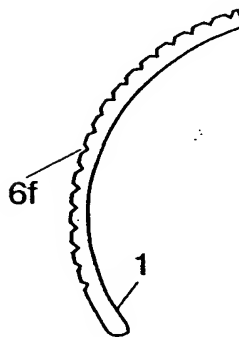
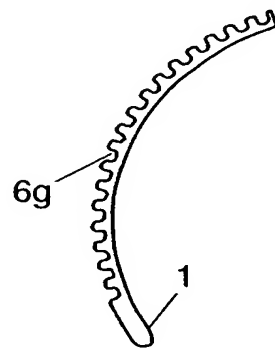


FIG. 6G



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FIG. 7

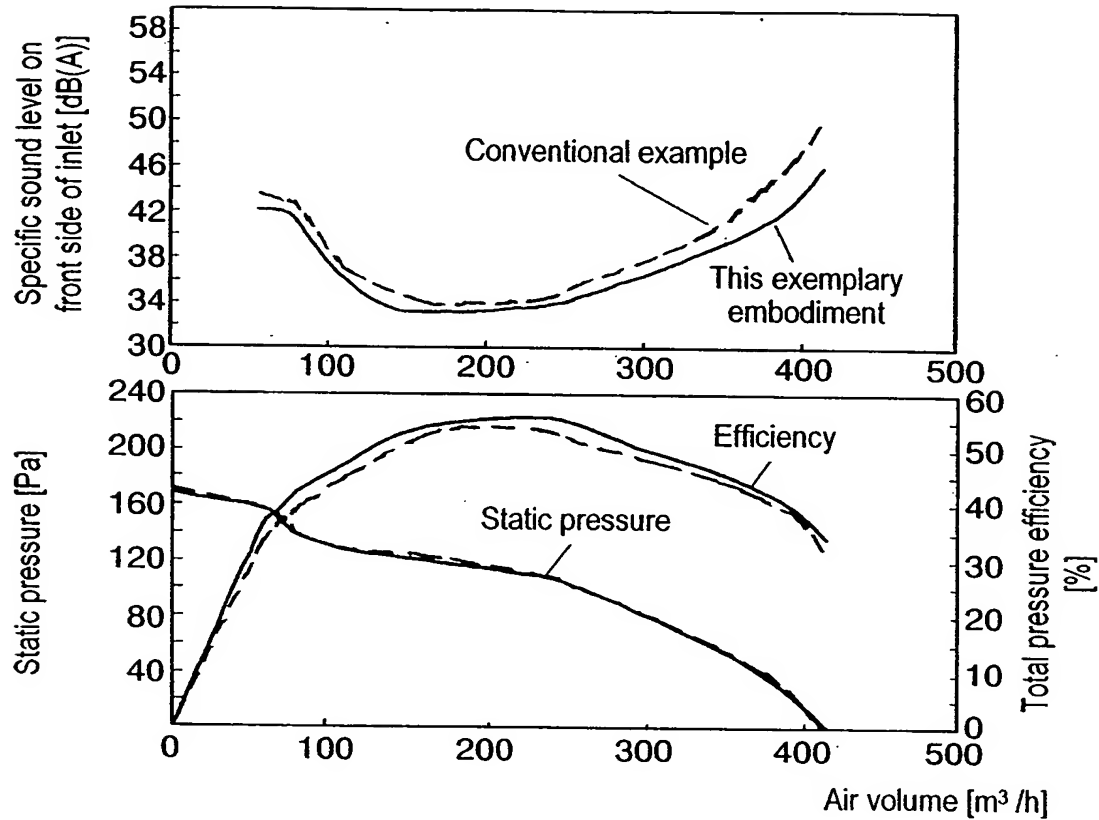
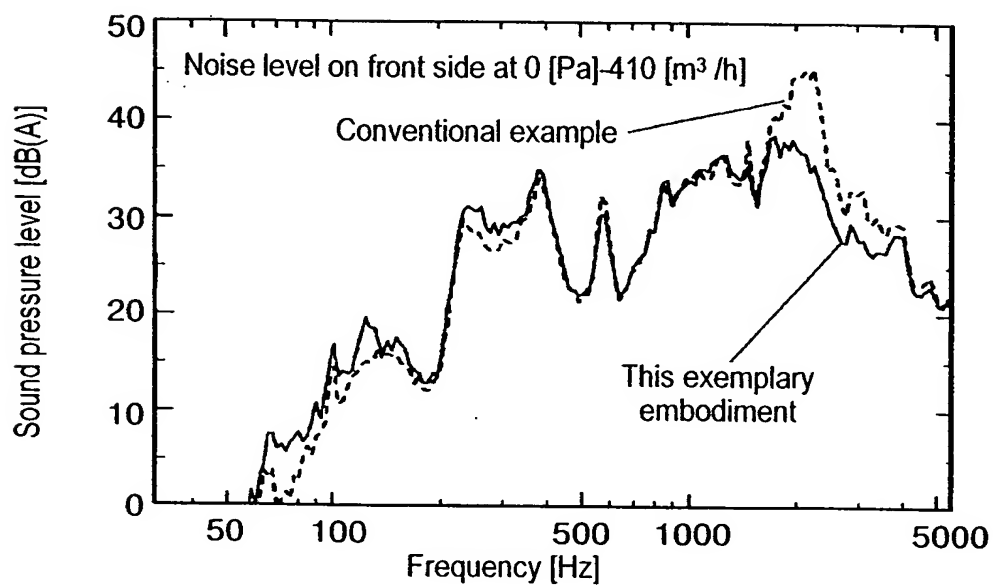


FIG. 8



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FIG. 9

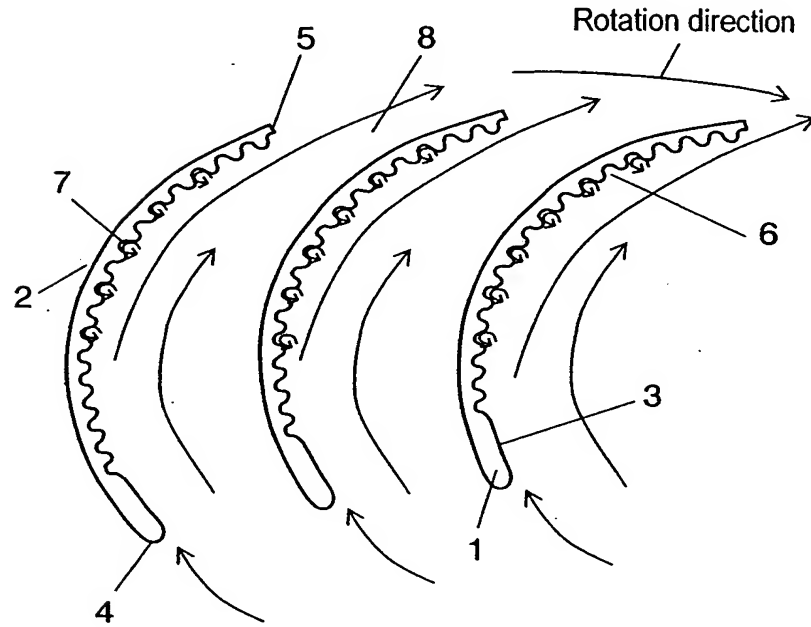
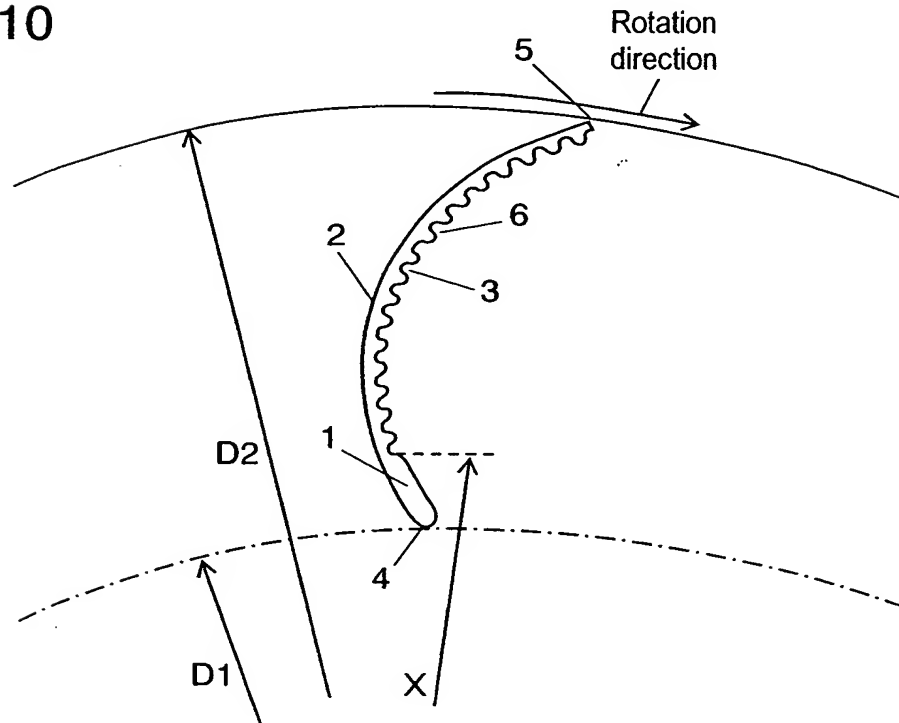


FIG. 10



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FIG. 11A

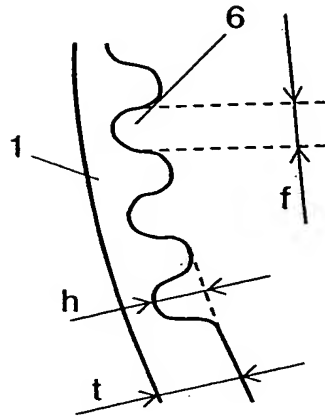


FIG. 11B

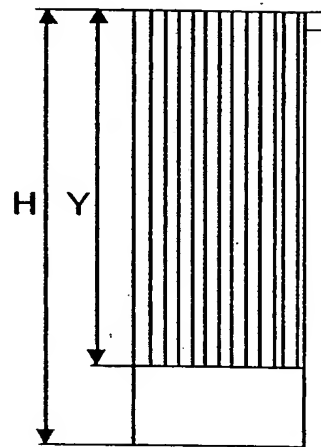


FIG. 12A

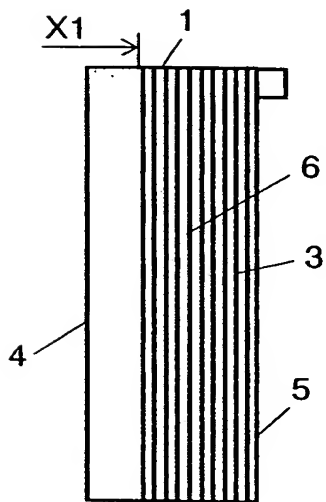
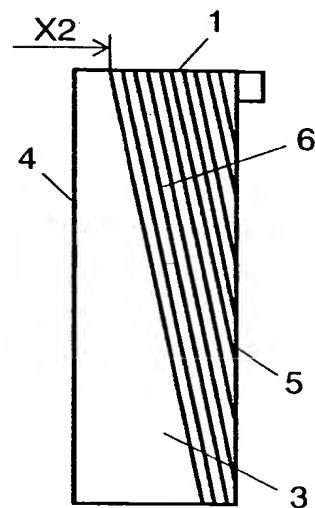


FIG. 12B



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FIG. 13A

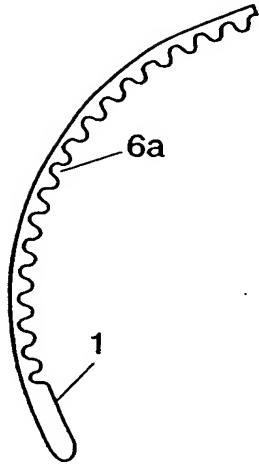


FIG. 13B

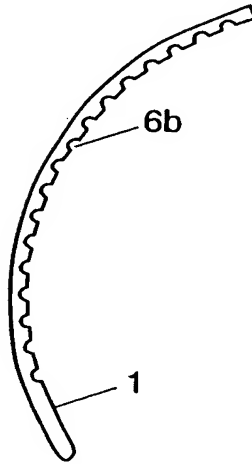


FIG. 13C

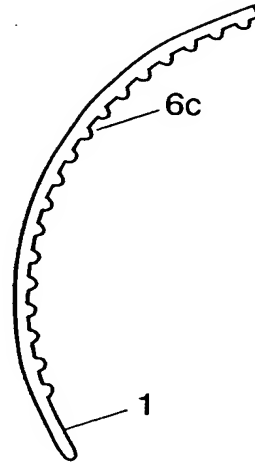


FIG. 13D

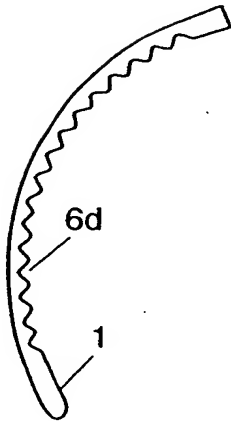


FIG. 13E

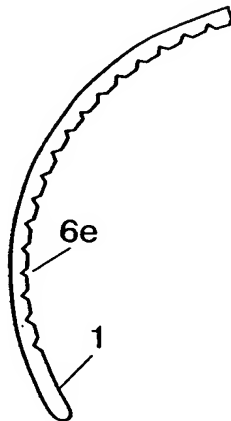


FIG. 13F

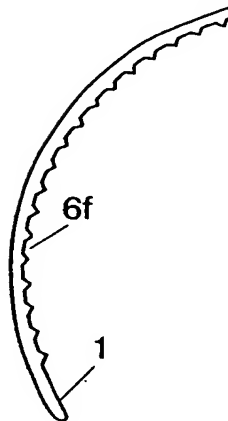
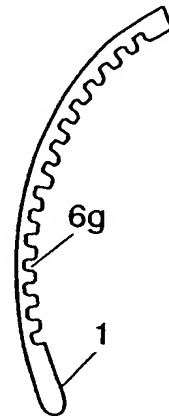


FIG. 13G



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FIG. 14

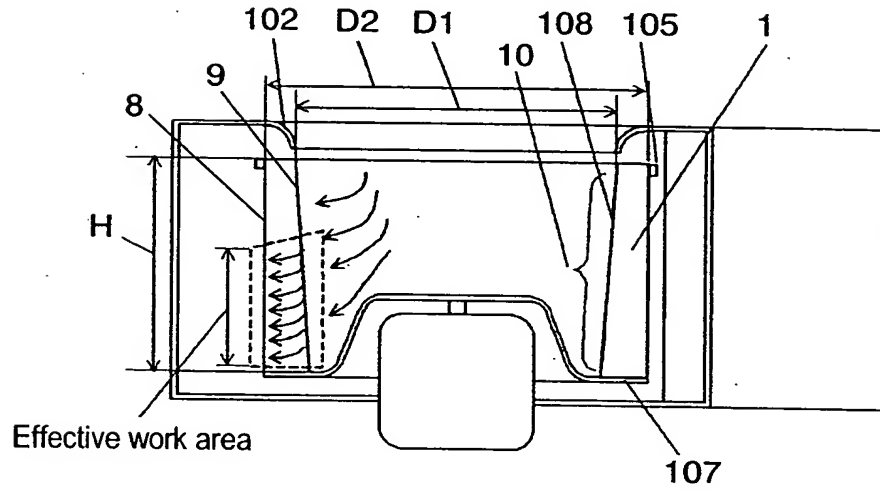
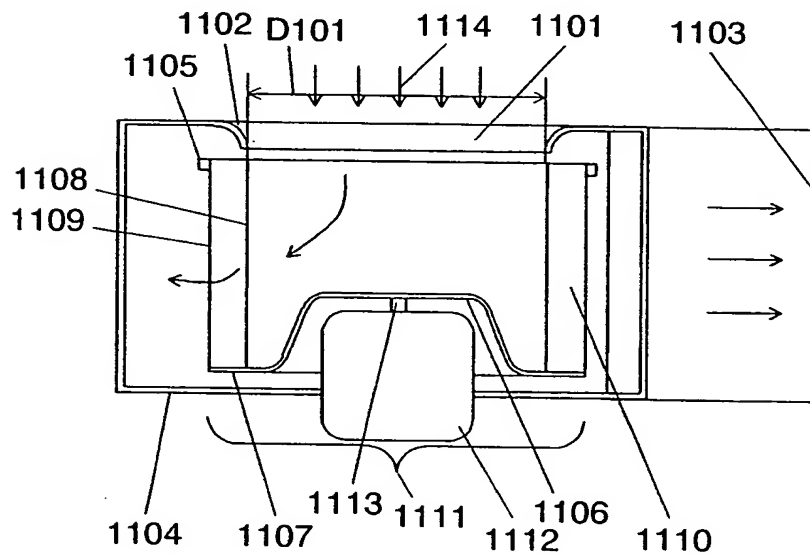


FIG. 15



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FIG. 16

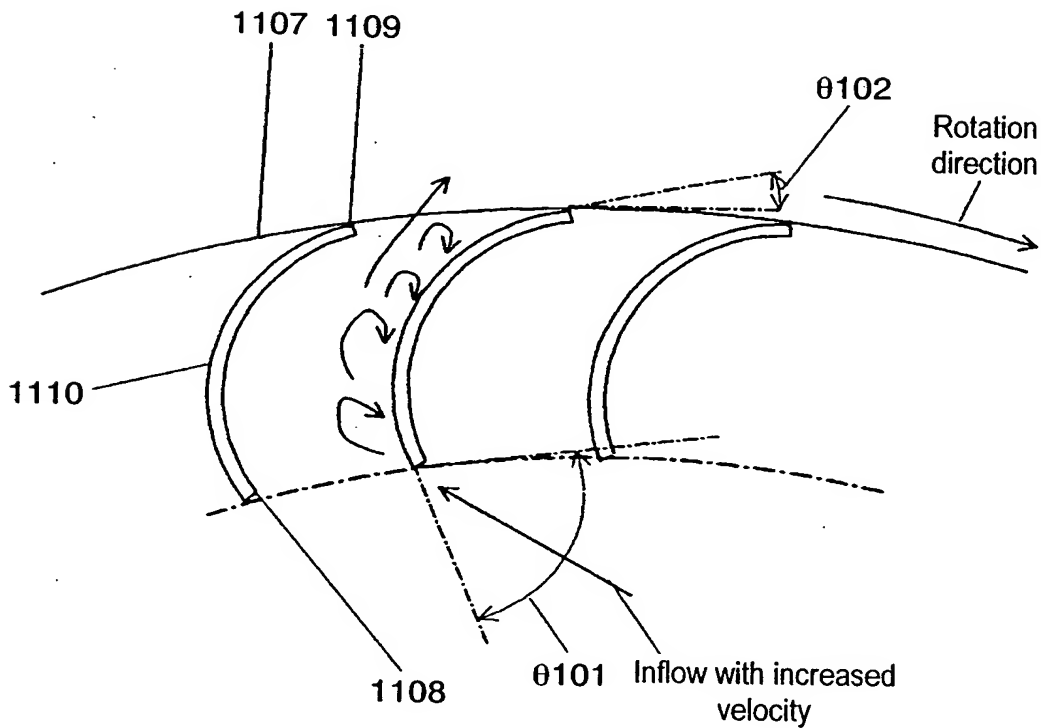
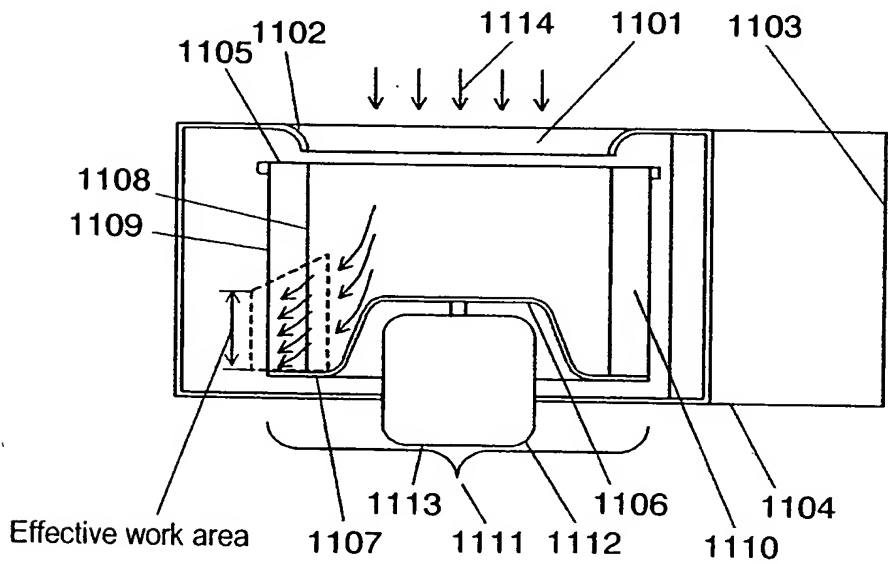


FIG. 17



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FIG. 18

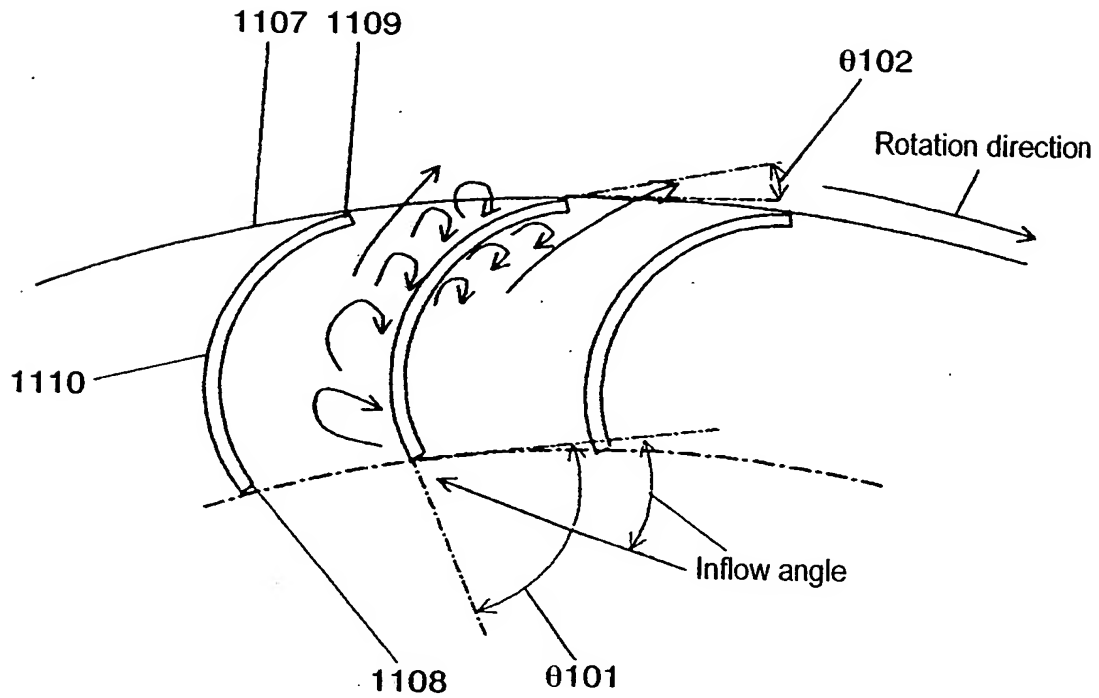
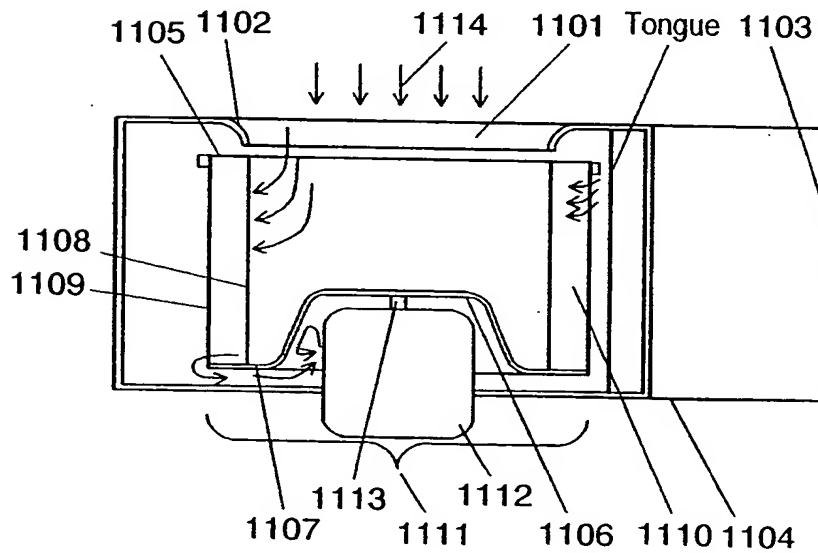


FIG. 19



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FIG. 20

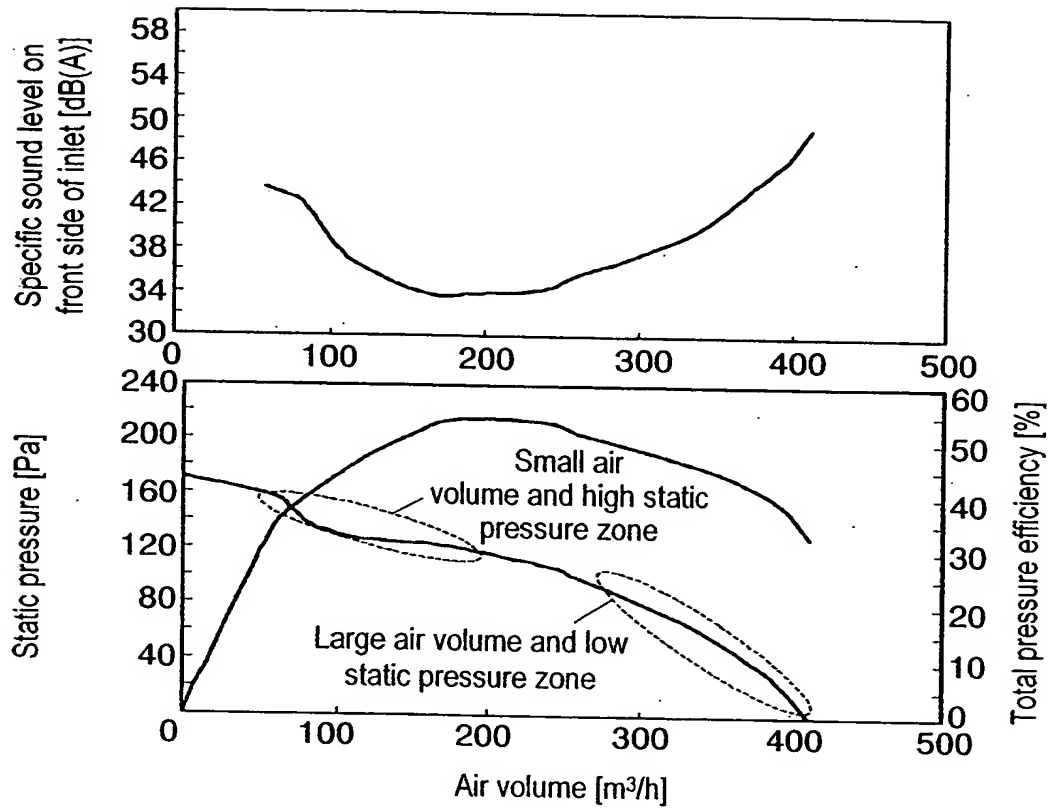
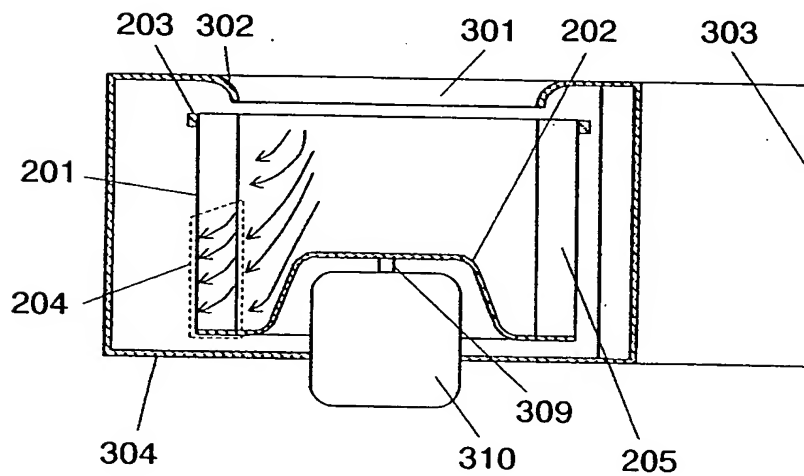
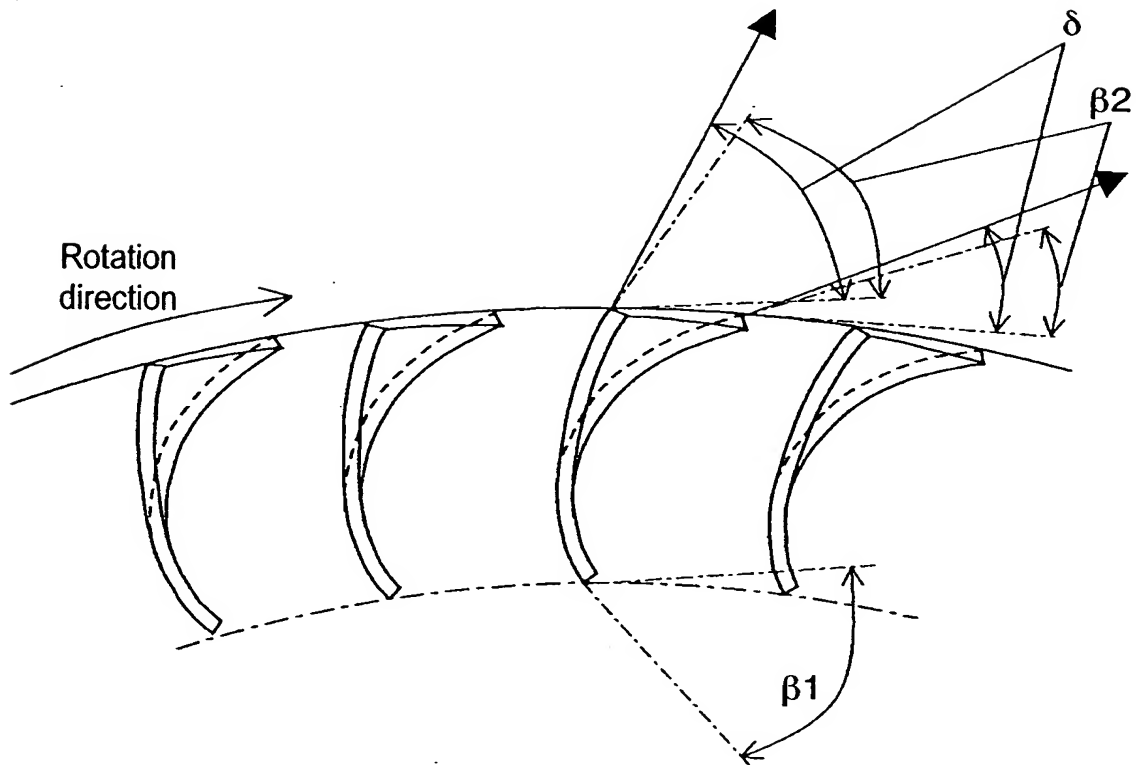


FIG. 21



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FIG. 22



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FIG. 23A

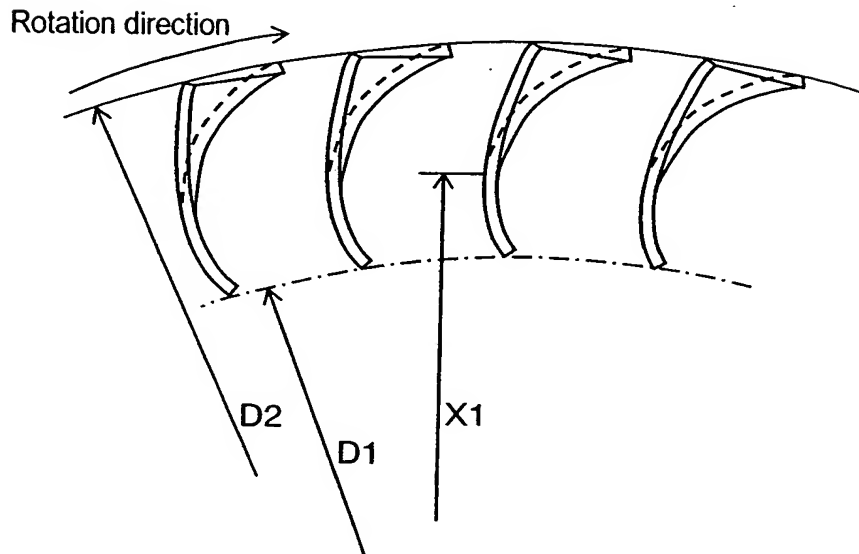
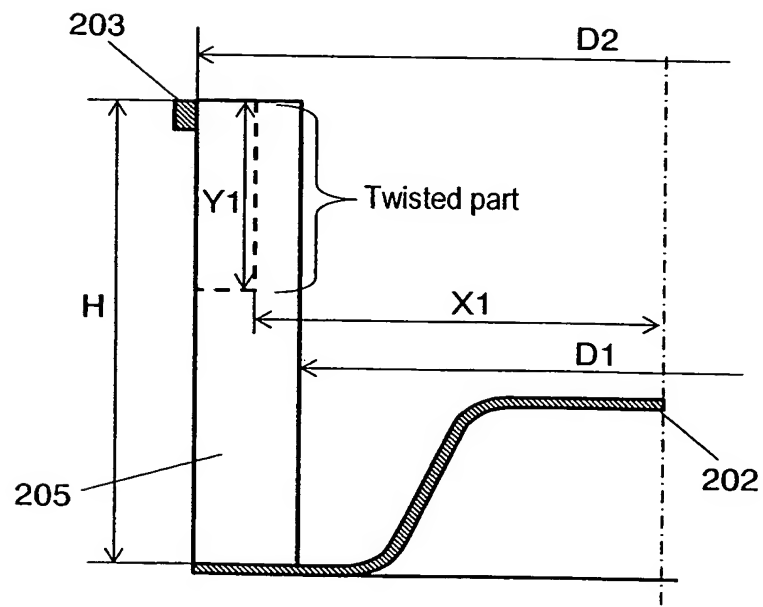


FIG. 23B



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FIG. 24

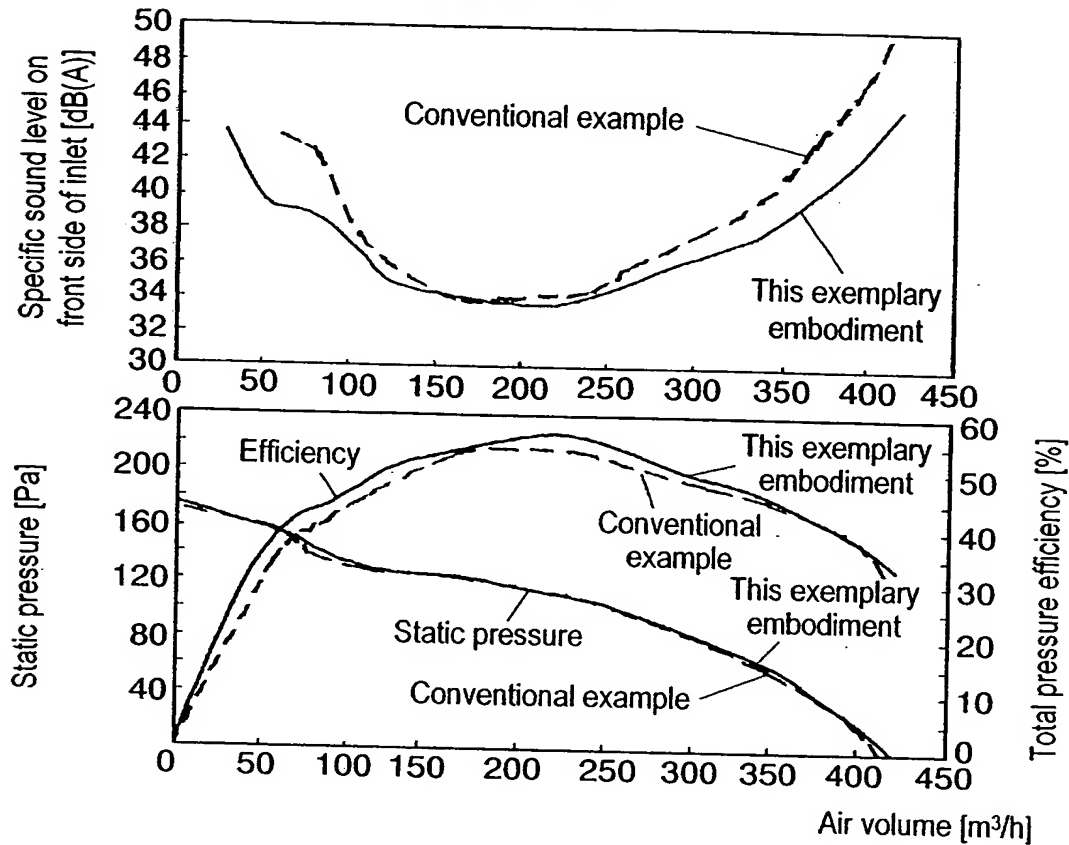
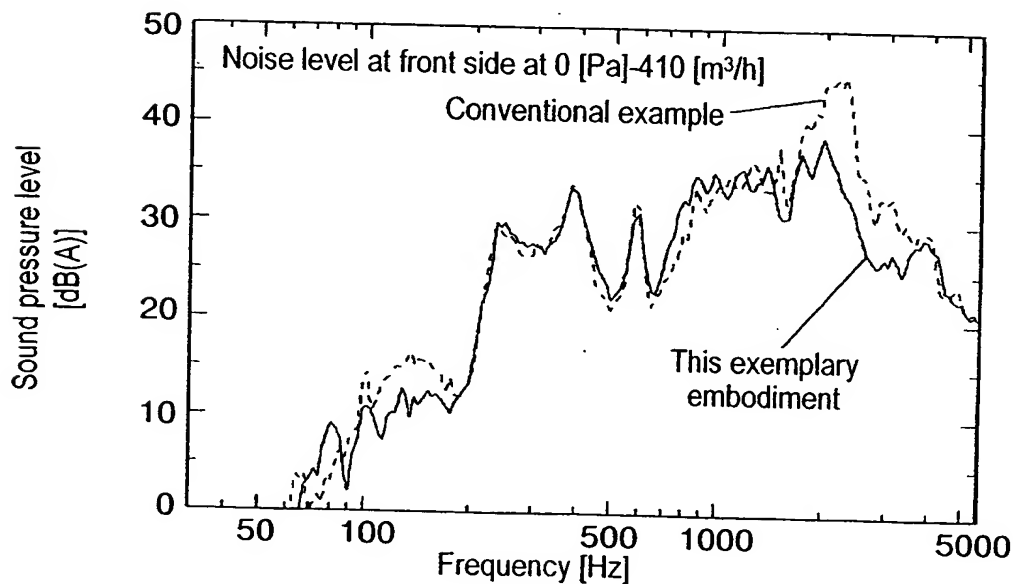
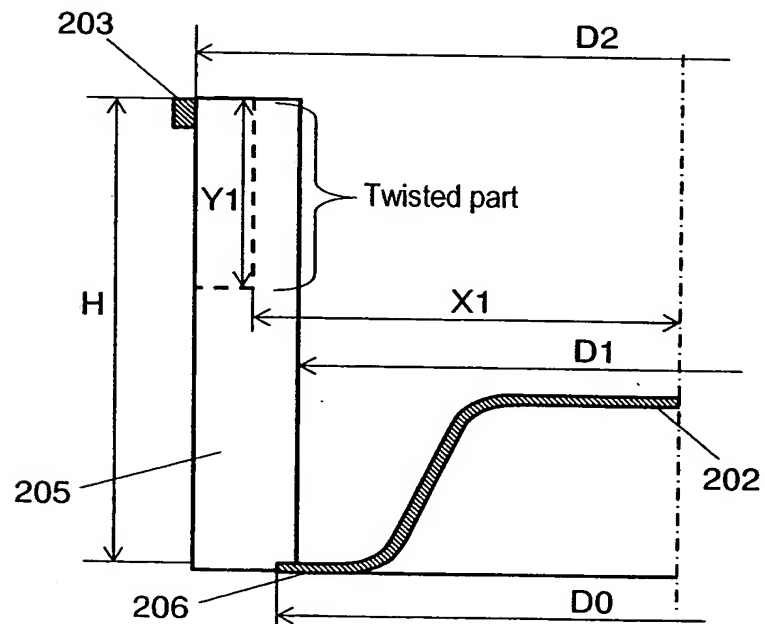


FIG. 25





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FIG. 28

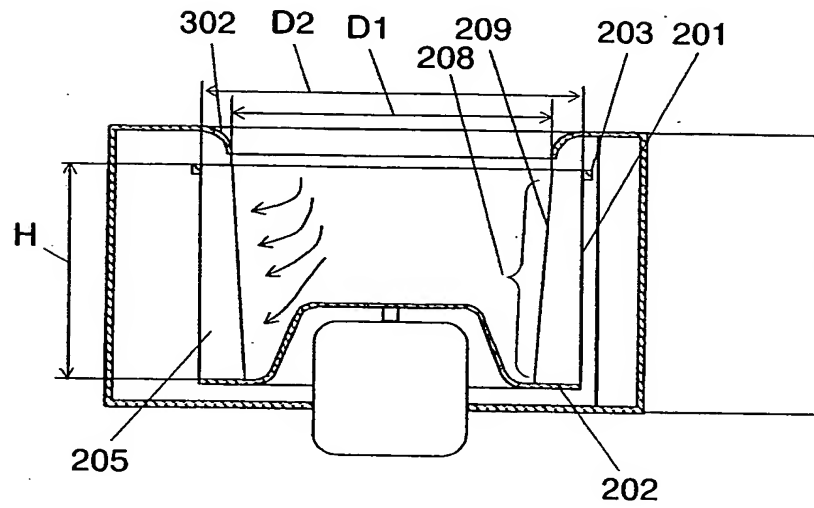
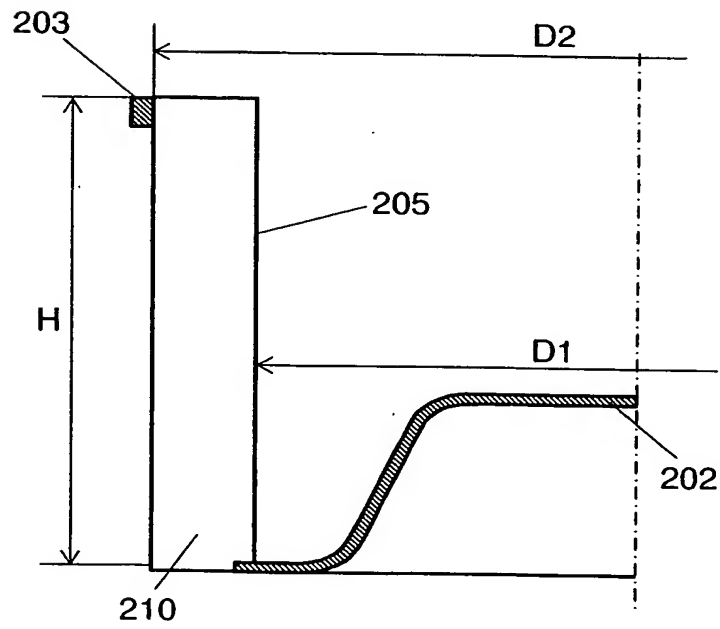


FIG. 29



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FIG. 30

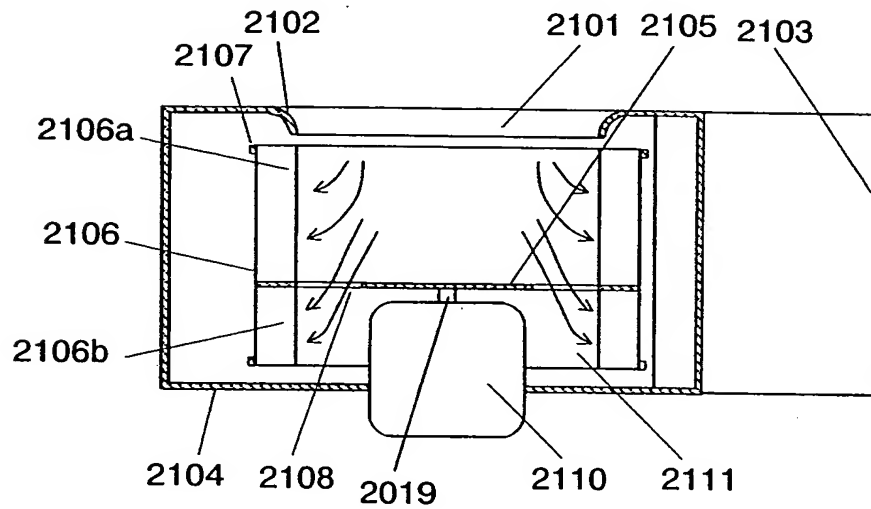
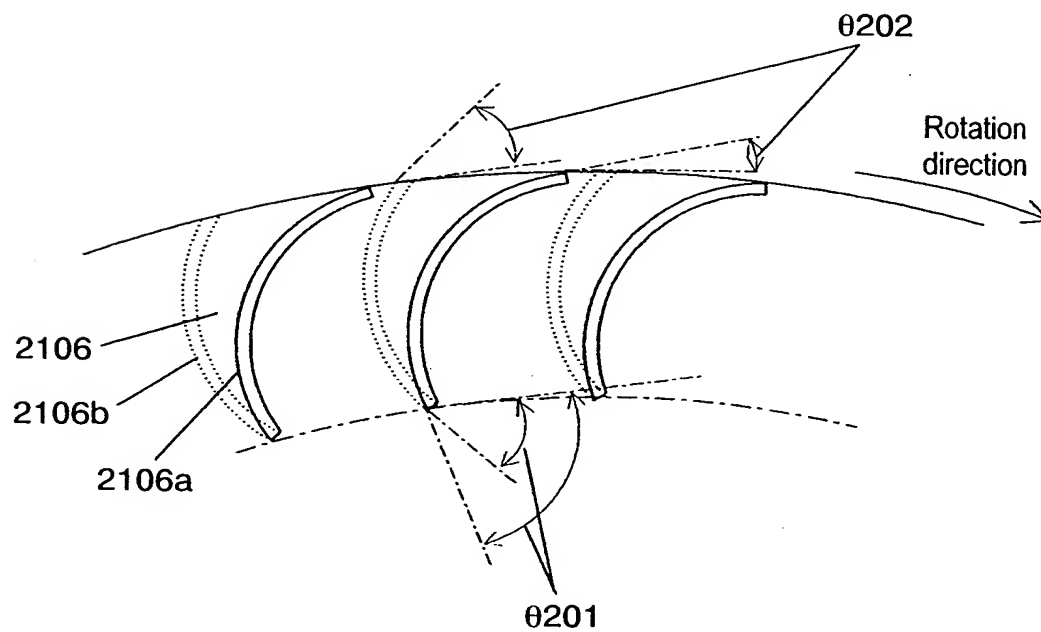
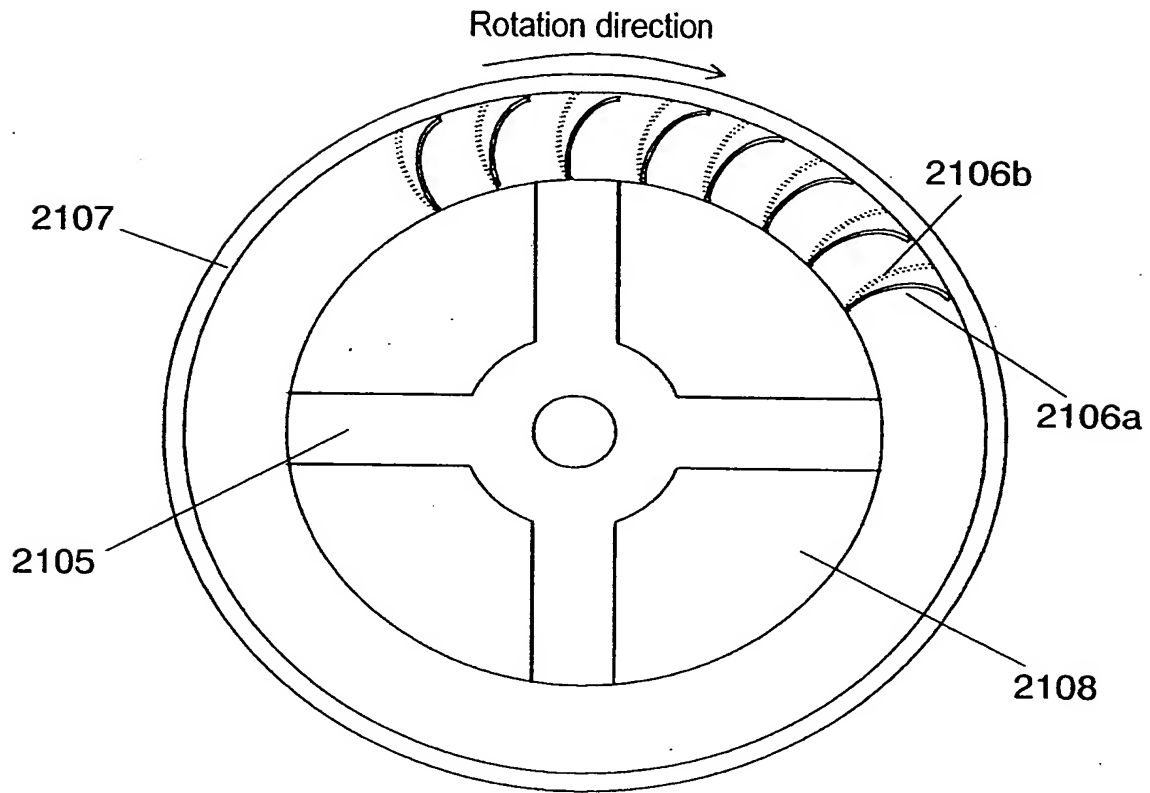


FIG. 31



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FIG. 32



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Reference numerals in the drawings

1	Blade
2	Dorsal side
3	Ventral side
4	Front edge
5	Rear edge
6	Asperities
7	Eddy
8	Blade outlet
9	Blade inlet
10	Tapered shape
X	Distance between start point of asperities and rotation axis
f	Length of recess
h	Depth of recess
t	Board thickness of blade
H	Height of blade
Y	Distance of asperities in direction of rotation axis
101	Inlet
D1	Internal diameter of fan
D2	External diameter of fan
102	Orifice
103	Discharge outlet
104	Casing
105	Lateral plate
106	Throttle
107	Main plate
108	Blade inlet
θ1	Inlet angle
109	Blade outlet
θ2	Outlet angle
110	Blade
111	Centrifugal fan
112	Motor
113	Shaft
14	Inhaled air
201	Blade outlet

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202	Main plate
203	Lateral plate
204	Mainstream range
205	Blade
206	End surface at opposite side of lateral plate
207	Centrifugal fan
208	Tapered shape
209	Blade inlet
210	Dorsal blade side
$\beta 1$	Inlet angle
$\beta 2$	Outlet angle
δ	Discharge angle
D1	Internal diameter of fan
D2	External diameter of fan
X1	Distance between start position of twisting and rotation axis
H	Height of blade
Y1	Distance of start position of twisting from lateral plate in axial direction
301	Inlet
302	Orifice
303	Discharge outlet
304	Casing
309	Shaft
$\theta 2$	Outlet angle
310	Motor